The Dirty Dozen

Twelve Failures of the Hurricane Katrina Response and How Psychology Can Help

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This comprehensive analysis addresses the United States' alarming lack of preparedness to respond effectively to a massive disaster as evidenced by Hurricane Katrina. First, a timeline of problematic response events during and after Hurricane Katrina orients readers to some of the specific problems encountered at different levels of government. Second, a list of the "Dirty Dozen"—12 major failures that have occurred in prior disasters, which also contributed to inadequate response during and after Hurricane Katrina—is presented. Third, this article encourages expanding psychology's role beyond the treatment of trauma to encompass disaster planning and mitigation efforts from a broader public health perspective. Finally, areas for important interdisciplinary research in human behavior that will influence our nation's overall preparedness for future catastrophes are identified, and ways psychologists can become personally involved beyond treating casualties are discussed.

Keywords: Hurricane Katrina, response preparedness, lessons learned, disaster and role of psychology

> We've got runners running from commander to commander. In other words, we're going to the sound of gunfire, as we used to say in the Revolutionary War.
>
> —Major General Harold A. Cross, Adjutant General, Mississippi National Guard[1]

The 2005 hurricane season served to demonstrate the grievous shortcomings of the federal, state, and local disaster response efforts in the United States. Despite the wake-up call provided by 9/11, response agencies at each of these levels were taken by surprise and were unprepared to respond effectively to a mass disaster. The response failures following Hurricane Katrina point to a variety of systemic problems. In particular, the issue of coordinated state and local government integration with the U.S. military continues to prove particularly difficult. Lack of effective disaster management becomes magnified when coalitions made up of civil and military authorities form decoupled command structures, often amplifying coordination and communication difficulties rather than improving them (Drabek, 2003).

One of the pressing questions our nation faces is how to optimize disaster response and maintain readiness for all-hazards events. Despite tremendous investments of time and money, these goals remain elusive. In fact, according to some accounts, our nation's ability to adequately respond to catastrophic events has declined since the early part of the last century (Winchester, 2005). For example, in the aftermath of the San Francisco earthquake, which occurred at 5:12 a.m. on April 18, 1906, it took just 153 minutes for federal troops to be marched into the city and put at the mayor's disposal. By 4:00 a.m. on the morning of April 19th—less than 24 hours after the earthquake occurred—William Taft, then Secretary of War, ordered hospital trains sent to California (Winchester, 2005). Using what would be by today's standards the most minimal of communication technology, a rapid, national response was initiated through a few terse telegraph messages.

In this article, we attempt to accomplish three tasks. First, we offer a timeline of events that occurred during and after the Hurricane Katrina disaster. Second, we present and discuss a list of 12 key failures that are common to all catastrophic disasters, including Hurricane Katrina. Finally, we argue that the behavioral sciences—and psychology in particular—are fundamentally linked to improving

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[1] U.S. House of Representatives (2006, p. 174).

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disaster management across all phases of these events, not just in their immediate aftermath (Jacobs, 1995).

The Unfolding of Events in Hurricane Katrina

Hurricane Katrina, named on Thursday, August 25, 2005, as it formed in the Bahamas, was seen as a major threat soon after becoming a Category 3 storm (Ripley, 2005). At the urging of the Federal Emergency Management Administration (FEMA), on the same day, the President declared an emergency in the state of Louisiana, allowing water, food, and ice to be stockpiled at military bases around the state. The system appeared to be working. Two days after Katrina formed, the Emergency Operations Center in Baton Rouge announced the ultimate fear: that the city of New Orleans might flood. On Sunday, August 28th, Mayor C. Ray Nagin recommended evacuation after the storm became a Category 5 Hurricane. *The evacuation order was not mandatory*. Freeways were jammed as those with the ability to leave obeyed, but tens of thousands did not because of financial constraints, lack of transportation options, concerns for pets and livestock, or because they had been able to ride out prior storms ("Timeline: How the Hurricane," 2005).

The first 72 hours after a disaster are deemed to be the most important period during which to assert order. However, in New Orleans, hesitation to coordinate effectively started locally and infected the chain of command all the way to Washington, DC. There was ambiguity as to who was in charge, goods were not utilized, and police seemed unwilling to work in the chaotic city ("FEMA in Chaos," 2005; Ripley, 2005; Thompson, 2005).

Figures 1 and 2 depict timelines of key events, responses, and results at city, state, and federal levels of response. Taken together, these timelines clearly illustrate where the communication and coordination failures occurred.

Despite billions of dollars spent following 9/11 to improve emergency coordination, the response to Hurricane Katrina utterly failed. An understanding of the behavioral aspects of both disaster management personnel and the civilians impacted by catastrophes is essential to improving response performance. Psychologists must begin to conceptualize their contribution to disaster response beyond just treating acute stress reactions in victims, instead expanding their view to include the treatment of an entire policy, planning, and response system that appears to be badly broken.

The Dirty Dozen: Twelve Key Failures

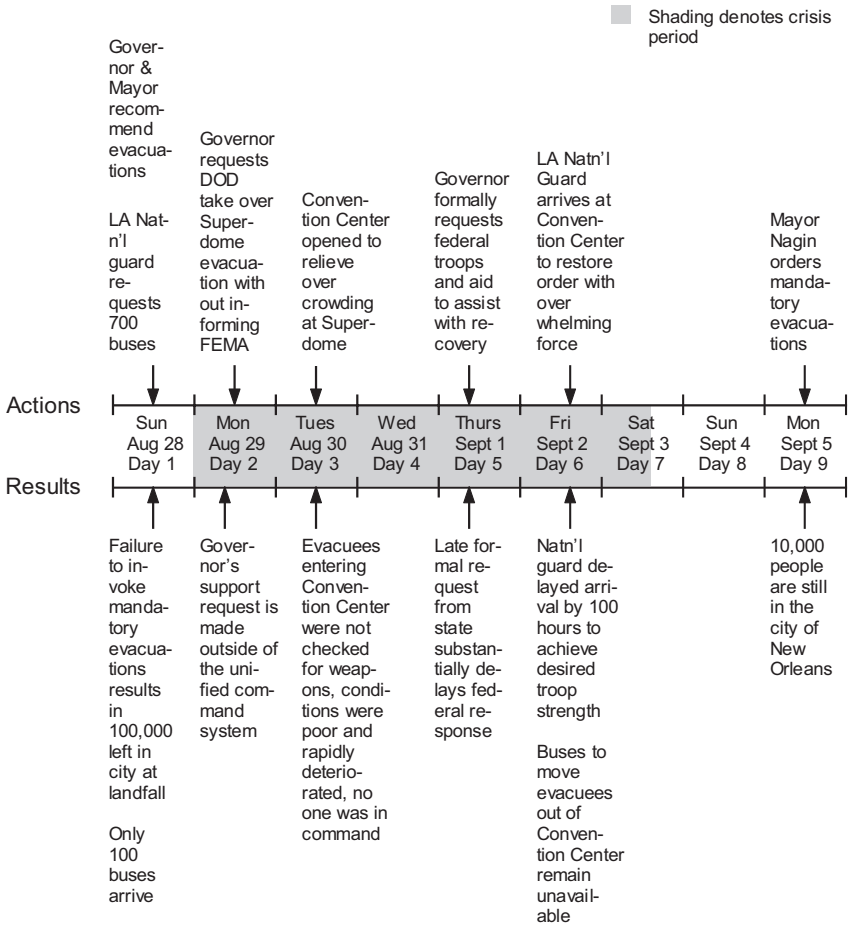
1. Lack of Efficient Communication

One of the main shortcomings in the response efforts was the lack of timely, effective communication between and within state and federal agencies. The transmission of accurate information about the impact of the disaster up the command chain, the transmission of data about decisions and the location of assets down the chain of command, and the sharing of knowledge horizontally in peer-to-peer relationships are critical to forming shared situational awareness (Beaubien, Baker, & Holtzman, 2003; Endsley, 2000). Most other disaster management tasks, such as decision making and coordination, are predicated on effective communication. However, *more* communication does not necessarily mean *better* communication (Härtel & Härtel, 1997).

Despite a well-established command and control protocol and the introduction of the new National Response Plan (U.S. Department of Homeland Security, 2004), at least four separate command structures were operating in Katrina's aftermath (U.S. House of Representatives, 2006). Two command structures were present within FEMA, profoundly clouding the operational picture for the duration of the recovery effort. Two distinct military commands were also established—the Louisiana National Guard and the U.S. Northern Command (NORTHCOM), which never came under joint control. This prevented adequate peer-to-peer communication between military commanders and resulted in several duplicated planning and execution tasks. Further, NORTHCOM efforts remained outside of the FEMA command structure for the duration of the incident (for a more detailed discussion of communication issues, see U.S. House of Representatives, 2006; Knauer, 2005).

A key communication error occurred when a FEMA forward observer surveyed the levee breaches from the air on the afternoon of August 29th and the White House was not informed of the breach because the Department of Homeland Security's Operational Center viewed this as an unconfirmed eyewitness report. Thus, the White House did not have confirmation of levee failure until early Tuesday, August 30th—some eight hours later. Had the observer's assessment been taken at face value or deconflicted expe-

Figure 1
State of Louisiana and City of New Orleans Response Timeline



Note. LA Natn'l guard = Louisiana National Guard; DOD = Department of Defense; FEMA = Federal Emergency Management Administration.

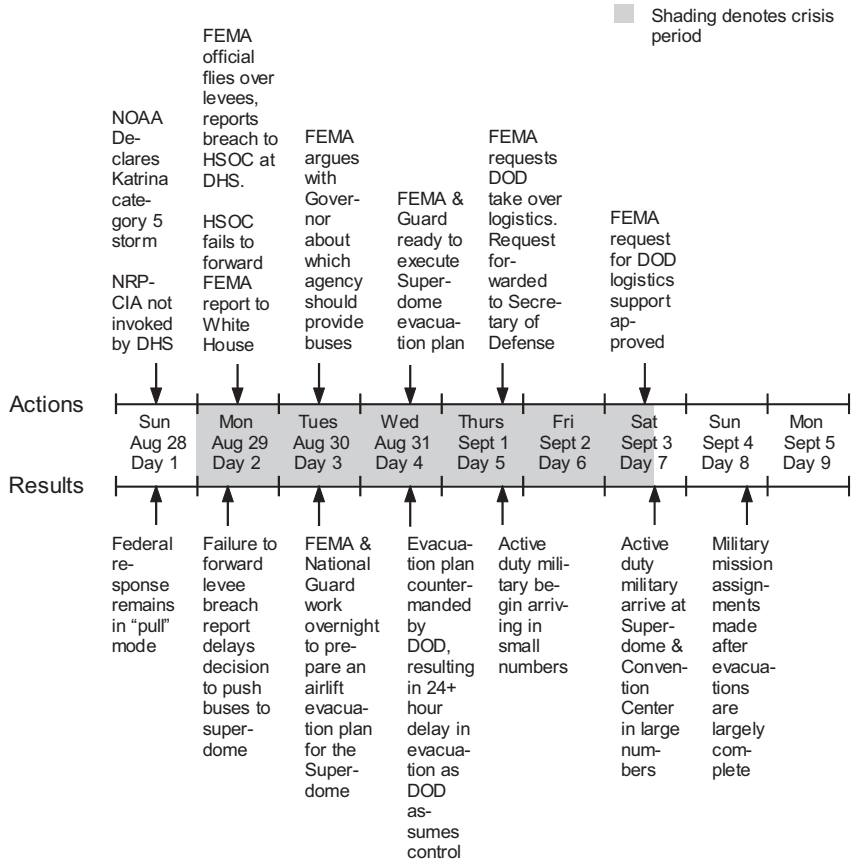
ditiously, the White House may have recognized the gravity of the situation sooner. The importance of this communication failure point cannot be overstated. A levee breach was understood to require a complete evacuation of New Orleans, necessitating immediate allocation of federal assets (U.S. House of Representatives, 2006).

2. Poor Coordination Plans

The distinction between communication and coordination is subtle, yet important. Whereas communication has to do with the movement of information between individuals or teams to create shared situational awareness, coordination refers to the movement of relief assets in an efficient manner. Effective coordination is predicated on good communication, but because of its emphasis on execution, coordination must also rely on good decision rules, prior training, availability of resources, and ability to actually perform the task (Freeman & Serfaty, 2002). A number of factors, including situational constraints, operator error, competing tasks, insufficient training, or external problems, may prevent optimal task execution (Endsley, 2000).

Several powerful examples of coordination failure during the Katrina disaster can be found. For instance, officials acknowledged that resources on the U.S.S. Bataan, already in the Gulf of Mexico, were not effectively brought to bear. Little use was made of the ship's doctors, six operating rooms, 600 hospital beds, or its ability to produce 10,000 gallons of water per day. The ship received conflicting orders, forcing it to abandon its efforts in the most severely impacted areas following the storm (Knauer, 2005). Similarly, the Department of the Interior (DOI) tried to assist FEMA by providing important assets to the agency, but according to the DOI's testimony, these efforts failed (Meserve, 2006). Finally, despite repeated requests to FEMA for buses, the Louisiana National Guard had no transportation assets to speed the evacuation process (Knauer, 2005). The lack of buses, rested and willing

Figure 2
Federal Response Timeline



Note. NOAA = National Oceanic and Atmospheric Administration; NRP–CIA = National Response Plan Catastrophic Incident Annex; DHS = Department of Homeland Security; FEMA = Federal Emergency Management Administration; HSOC = Homeland Security Operations Center.

drivers, and the synchronization of moving buses and security personnel to the Superdome, the Convention Center, and Cloverleaf evacuation locations remained deeply problematic throughout the relief effort.

3. Ambiguous Authority Relationships: Who Is in Charge?

Of all the coordination problems, the single most significant failure was the Department of Homeland Security's decision to largely remain on a "pull" footing, waiting for state and local government requests for pulling federal resources into the disaster zone. Instead, because of the predicted scope of Katrina, the National Response Plan Catastrophic Incident Annex (NRP-CIA) should have been invoked prior to landfall, allowing FEMA to switch to a "push" stance—rushing assets to the area without waiting for requests from local governments too overwhelmed to assess their own needs (U.S. House of Representatives, 2006).

The NRP-CIA was *never* invoked during or after Hurricane Katrina. Similarly, the Interagency Incident Management Group, an emergency advisory team for the Secretary of the DHS was never activated despite pressure to do so from the White House. These failures forced some FEMA officials in Louisiana to switch to a resource push stance on an ad hoc basis, placing these officials in legal jeopardy as they endeavored to individually correct FEMA's drifting course of action (U.S. House of Representatives, 2006).

Serious missteps were also apparent at the state and local government levels. Despite intense pressure from federal authorities to issue mandatory rather than recommended evacuations, the Mayor of New Orleans was hesitant to do so prior to landfall because of the enormous cost that is associated with this course of action (Ripley, 2005). No "hasty plan" was put in place to shore up gaps in prior disaster exercises delineating the responsibilities of those responding to special needs evacuees, even though FEMA

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encouraged the governor and the mayor to do so prior to landfall (Ripley, 2005).

4. Who Should Be in Charge: Federal or State Governments?

After Hurricane Katrina, public dissatisfaction with the government's response came to the forefront; 52% of the public stated that the government had done a poor job in preparing for Katrina, and 62% stated that the response was too slow to those hardest hit (Ripley, 2005). The White House preferred to assign blame to the mayor of New Orleans, C. Ray Nagin, and the governor of Louisiana, Kathleen Babineaux Blanco, who stated that she verbally asked President Bush for "everything you got" (Tumulty, 2005). More than a year after the storm, jurisdictional issues continue to plague residents attempting to rebuild.

Unfortunately, lessons learned from prior hurricanes about managing authority relationships between federal, state, and local agencies have yet to be applied effectively. For example, when Hurricane Andrew struck in 1992, Florida's then-governor, Lawton Chiles, failed to formally request federal assistance for three days after landfall. Similarly, Governor Blanco verbally requested aid during Katrina's aftermath, but this was not enough to set in motion a strong federal response. The statutes governing disaster response emphasize state control and generally require the state to provide a detailed, written request for federal disaster assistance. Thus, the same three-day delay in providing a formal request for aid that was faulted in Hurricane Andrew also occurred in Hurricane Katrina, more than a decade later (Knauer, 2005).

Part of the reason for this failure is the complexity of the legal arrangements that govern and constrain federal military involvement in domestic affairs. The Posse Comitatus Act came into effect in 1878 and has been seen as central to protecting the rights of states and as fundamental to our modern democracy (Dowell, 1925; Lujan, 1997); however, the law also creates roadblocks to the effective use of military assets in catastrophic disasters. In response to these concerns, the Stafford Act was passed in 1984 to provide explicit statutory mechanisms for the deployment of federal troops in a wide array of recovery functions in the event of a disaster—but the process of requesting federal aid is still complex. The legal intricacies created by the Posse Comitatus and Stafford Acts may be further confounded in the South by the history of the Reconstruction and a deep-seated mistrust of the federal government.

Tragically, despite the presence of legal mechanisms to form a unified command, the convolution of the laws governing integrated state and federal response and the historical baggage prevented federal assets from moving into Louisiana fast enough. Furthermore, because of the fear of overstepping the rules of Posse Comitatus, U.S. military commanders did not invoke the doctrinal "immediate response authority" vested in them, which had been used in the 1906 earthquake.

5. Counterterrorism Versus All-Hazards Response

Hurricane Katrina was one of the worst natural disasters the United States has experienced; natural disasters of this magnitude dwarf the impact of terror attacks. In fact, President Bush compared the storm to a terrorist attack, stating that the terrorists look at the storm's devastation "and wish they had caused it" (Sager, 2005, para. 1). The President stated that the response to Hurricane Katrina was "not acceptable" (Young & Borenstein, 2005, para. 1). However, the federal government has invested disproportionately in counterterrorism at the expense of disaster preparedness as a whole for the last several years, impairing response to statistically more likely and more destructive natural events. Of the $1.2 billion the DHS doles out for disaster preparedness; $1.1 billion serves to combat terrorism, whereas barely $180 million has been allotted for disasters such as Hurricane Katrina (Young & Borenstein, 2005).

6. Ambiguous Training Standards and Lack of Preparation

Hurricane Katrina exposed the lack of training and systematic qualification standards for disaster response agencies and individual decision makers. The qualifications of the Secretary of Homeland Security, Michael Chertoff, as well as those of FEMA director Michael Brown, were roundly questioned in congressional hearings following the disaster. With no previous experience in disaster management, disaster response, or counterterrorism, Mr. Chertoff was blamed for many of the failures. Mr. Brown, according to his own testimony, was upset and confused by his assignment as FEMA Principal Federal Official for Hurricane Katrina, as he was not a qualified disaster manager and was not on the roster of potential principal federal officials (U.S. House of Representatives, 2006).

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Training standards and performance assessment of disaster management professionals remain murky subjects five years after 9/11. Training expectations for first responders, state emergency commanders, and federal officials are terribly cumbersome. To date, much of the money granted to states through the DHS has not been spent, and trainings offered often replicate prior learning rather than extending competencies.

These problems are not limited to Louisiana. An investigative report in Santa Clara County, California, showed that only $1 million of homeland security training money had been spent, just 15% of the $6.8 million set aside; those coordinating the spending lacked data on what training the county's 2,800 police officers and 1,500 firefighters received before homeland security money arrived; and a countywide committee was months from finalizing an overall training plan even though federal monies started flowing two years ago (Jacobs, 2005; for a more detailed discussion, see Government Accounting Office, 2005).

Standards for accrediting individual disaster managers and disaster response agencies are set by the International Association of Emergency Managers (IAEM, 2006) and the Emergency Management Accreditation Program (EMAP, 2004), respectively. The IAEM Certified Emergency Manager designation is based on three years of emergency response experience, possession of a bachelor's degree or equivalent, 200 hours of training, self-defined contributions to the field, written responses to disaster scenarios, and a 100-item multiple choice exam (IAEM, 2006). No verification of actual performance appears to be necessary for this certification. The sample items for the multiple choice exam are not specific to any particular emergency manager's duties and appear to be answerable using little more than common sense. Similar concerns exist with EMAP accreditation of response agencies. No ties between accreditation and actual disaster management performance are in evidence in the EMAP program.

7. Where Is the Learning in "Lessons Learned"?

A tremendous amount is made of "lessons learned" and "after-action reports" in the aftermath of major disasters and training exercises. Yet despite their promise, knowledge management approaches appear to be ineffective in substantively impacting future performance. The U.S. military, large corporations, and high-reliability organizations have allocated considerable financial and staff time resources to developing complex, technically sophisticated lessons learned systems (LLS). However, researchers in this field note that "in spite of significant investments in these systems, their ability to promote knowledge sharing is limited . . . large repositories of lessons exist, their information is not being used" (Weber, Aha, & Becerra-Fernandez, 2001, p. 17).

In order to begin addressing the well-understood vulnerabilities in Louisiana, FEMA organized and funded a multi-agency exercise in 2004 based on a fictional storm called "Hurricane Pam" (U.S. House of Representatives, 2006). Congressional investigators called the exercise "prescient" in its predictions. However, many of the lessons taken from the Hurricane Pam exercise, as well as from prior hurricanes and other major natural disasters, were not implemented in Katrina. FEMA officials charged that the State of Louisiana and local governments failed to follow through on problem areas that were identified in the Hurricane Pam exercise, whereas several local governments expressed that they believed FEMA's role was determined in the exercise and that the agency did not act as it did during the exercise (U.S. House of Representatives, 2006).

LLS rely on a five-step process that includes collection of the lesson, validating or verifying the accuracy of the lesson, storing the lesson, disseminating the lesson, and reusing the lesson (Weber, Aha, Muñoz-Ávila, & Breslow, 2000). Substantial effort has been put into addressing the first three steps, yet problems in dissemination and reuse of lessons learned continue to plague knowledge management systems. Reuse is typically inhibited by poor representations of problem antecedents, and LLS are rarely integrated into organizational decision-making processes (Weber et al., 2001). Although technical solutions are often funded, knowledge management is also clearly a human enterprise. Personality factors and differences in integrative complexity may play an unexplored role in disaster managers' ability to capture, process, and accurately apply lessons learned from prior events to the impending problems of a new catastrophe (Tetlock, 2005; Wilson, 2002).

8. Performance Assessment Not Integrated Into the Process

The training and evaluation of intrateam performance are not simple. However, these tasks become exponentially more difficult when developing appropriate edu-

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cation and assessment techniques for large-scale joint coalition command and control networks. A comprehensive performance assessment system that provides benchmarks for *actual* (not planned) disaster response performance within and between major response agencies is needed. This system should be developed by disaster management experts and should integrate behavioral science research and psychometric rigor (Flin, 1997; Helmreich, Merritt, & Wilhelm, 1999; McLaughlin, Doezema, & Sklar, 2002).

In military terminology, disaster recovery may be seen as a joint response within the individual state's control, utilizing peer level organizations such as police, fire, and emergency medical technician (EMT) services. However, if the disaster is complex enough, the event may require federal assistance and military support. Federalization of a disaster further disperses teams and command systems at geographical and organizational levels. As federalization of a disaster occurs, the scope of the effort may be seen as transitioning from a joint operation within a state's existing command structure to a coalition environment with multiple, decoupled command elements, in which the probability of emergent behavior and improvisation increases substantially (Mendonça & Wallace, 2004). No adequate performance evaluation system for *ad hoc* disaster coalition performance is in existence at present (Franco, Joseph, & Beutler, 2005).

9. The Geography of Poverty: Are Race and SES Response Factors?

Hurricane Katrina is not the first major storm to impact poor, largely Black communities disproportionately. An almost forgotten storm, the Okeechobee Hurricane of 1928, destroyed much of the Florida Keys. The similarities between the two hurricanes are at once striking and disturbing. Both storms led to the breach of poorly constructed levees responsible for the majority of the fatalities. The Okeechobee Lake, surrounded by migrant farming communities, drew workers from the South and from the Caribbean islands. Although the physical destruction impacted the communities fairly evenly, it is estimated that three fourths of the dead were Black migrant workers. Furthermore, resentment about racial inequity in the recovery effort still lingers in Florida—75 years later (Kleinberg, 2003).

In neighborhoods such as New Orleans's Ninth Ward, residents lacked access to quality education, housing, and employment opportunities that are available in surrounding communities. In the last three decades, suburban populations have increased three times as much as urban populations, resulting in a decentralization of jobs and an overall decrease in employment in urban areas (Berube & Katz, 2005). In addition, federal and state tax laws favored housing development in suburban neighborhoods, whereas development in urban neighborhoods dwindled (Berube & Katz, 2005). Poverty in neighborhoods such as New Orleans's Ninth Ward became increasingly concentrated, with fewer chances to escape the cycle of poverty. The lack of essential resources, shelter, transportation, and information were fatal deficits for the poverty-stricken Katrina victims. Evacuation plans involved the use of services and resources not available to many residents in New Orleans.

Despite the American Psychological Association's (APA, 2003) adoption of a Resolution on Poverty and Socioeconomic Status, research, policy formation, and awareness of the consequences of disaster on those who are poor has not received enough attention. For those who had doubts, Katrina reconfirmed the perception that the federal government does not care for the nation's sick, poor, elderly, and minority citizens in times of crisis.

10. Rumor and Chaos

Although the conditions necessary to incite panic rarely occur, the possibility for unnecessary, deeply disruptive secondary chaos is a real threat in catastrophic disasters. There is some research on panicked flight, outbreaks of multiple unexplained symptoms, rumor, and urban legends (Allport & Postman, 1947; Pastel, 2001). However, questions remain about individual and group behavior in complex, risk-laden, and ambiguous situations, especially as some of the assumptions of Allport and Postman's work are increasingly being challenged (Miller, 1992).

Many charged that New Orleans Mayor C. Ray Nagin handled public communication poorly, as he sent out a "desperate SOS," described "hundreds of armed gang members" performing violent acts at the Superdome, and grossly overestimated the number of deaths the hurricane would cause (Knauer, 2005). Once picked up by the mass media, these stories took on the proverbial "life of their own." Search and rescue flights were halted in response to reports of gunshots (which turned out often to be fired to *attract* the attention of responders, not to drive them away), hospital evacuations were suspended, drivers requested

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armed escorts, and responders shifted to a riot control footing. What started out as rumor quickly became a costly self-fulfilling prophesy that led to greater separation between hurricane victims and their rescuers rather than a collaborative relief effort ("Convoys Bring Relief", 2005).

Although much of the country later viewed Mayor Nagin's commentary and the rumors of rapes and murder at the Superdome as irrational, as behavioral scientists we must examine this phenomenon with care. The role of rumor and urban legend in marginalized communities is multifaceted—African Americans have a historical mistrust of the government, White Americans, corporations, and other mainstream institutions. Unfortunately, these perceptions are rooted in actual events (Freimuth et al., 2001).

Inner-city rumors are one way communities develop and maintain interpersonal bonds and a collective sense of identity and negotiate the meaning of marginalized status (Miller, 1992). Contrary to the suggestion that those who promote rumor are highly suggestible, uncritical, or irrational (Le Bon, 1899/1960), the folkloric perspective argues that rumors are meaningful, are sometimes accurate, and assist groups in negotiating ambiguity and defining potential future actions (Miller, 1992). From this perspective, rumor can be viewed as the most ancient form of mass communication (Kampferer, 1990), providing warning about events that threaten group survival (Benford, 1999).

In the case of Katrina, rumors and the mayor's communication may have served as a way of circling the wagons, preparing people for the worst, creating social cues for mutual aid, signaling the need for help from the outside community, while also expressing a profoundly ambivalent message to the federal government—"We want your help, but we've learned from experience that we can't trust you." This is not to say that Mayor Nagin's comments were effective or responsible, but they may have been the best information people had in the absence of more concrete crisis communication from state and federal officials.

11. Personal and Community Preparedness

The response of state and local governments, as well as that of individuals, appeared to differ between Louisiana and some of the municipalities in Mississippi that were also devastated by the storm. The residents of New Orleans who were unable to escape the storm have been characterized as clamoring for government assistance rather than relying on their own ingenuity. In contrast, the response in Mississippi was cast as one in which individuals and religious organizations came to each others' aid during the time when government resources were unavailable.

This issue is complex because of competing political interests that color reporting of the events, but it is nonetheless something that must be probed. Some suggest that years of dependence on government assistance, the corruption of local government, and a focus on external rather than internal control created a culture of dependence in the Big Easy. Others charge that these views sweep under the carpet the fact that Blacks and Whites, Mississippians and Louisianans, and rich and poor were all terribly impacted by the devastation—but that the poor had considerably less access to resources that would help them regain their footing (e.g., homeowners insurance).

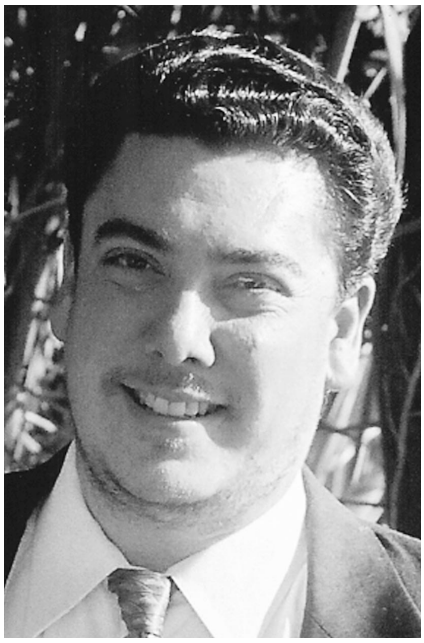
The sharp political contrasts between the two states, their responses to Katrina, and the subsequent meaning making of the event can perhaps best be seen in this statement by Mississippi's Governor Haley Barbour (2006):

> Our people didn't whine or mope around; they're not into victimhood. Immediately after the storm passed through, they hitched up their britches and began helping themselves and helping their neighbors. The stories of ordinary people performing extraordinary acts of courage and selflessness are extremely common. The first responders, law enforcement, national guard, and military; but also neighbors helping neighbors, churches helping the needy and poor people more interested in others getting assistance. That Mississippi spirit was obvious to people across the country and around the world. (para.18)

In contrast, sociologist Steven Lukes (2005) argued that the breakdown of institutions in the wake of Katrina left a fundamental division between people: "[A] divide appears between those who have means of escape and survival and those who, until help arrives, have not" (para. 13). He went on to note that in the disaster,

> [W]e caught a glimpse of the kind of powerlessness on which we do not normally reflect: the sudden unavailability of social objects, actions and relations. If there is no-one to pay and the waters are rising, you can't buy and you can't even loot. The authority of a policeman, even *being* a policeman can begin to lose meaning in the chaos of the Superdome. What began to appear for a brief period until social institutions began to re-acquire their grip was what Giorgio Agamben has called "bare life"—the powerlessness to live social lives fit for human beings. (Lukes, 2005, para. 14)

For a population that uses public transportation to engage in daily activities, there should be little surprise that



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the removal of public services left those in New Orleans dependent on federal rescue. This interpretation subtly suggests that government is an object of attachment for all of us, and for those at the bottom rungs of society, its removal and the ensuing perception of abandonment may be particularly dysregulating.

12. Disaster Mental Health and the Role of Mental Health Professionals

As psychologists struggle to develop the best evidence-based intervention for traumas, questions remain about how best to intervene in a community after a traumatic event. Opponents of Critical Incident Stress Debriefing (CISD), a structured group debriefing intervention provided within 72 hours of exposure to a traumatic event, claim that there is little evidence to support the efficacy of this approach. One of the issues regarding interventions such as CISD is that most people may neither want nor be in need of this manner of "professional help." Although extreme distress is common in the immediate aftermath of a traumatic event, most survivors will recover spontaneously.

CISD was originally developed for first responders and later adapted for civilian and military survivors (Mitchell, 1983). Unfortunately, research on the efficacy of this application has largely failed to demonstrate clear benefits. The predominant opinion among scientists who have studied CISD effects is that individuals who receive it fare poorly, even compared with those individuals who receive no treatment at all (e.g., Litz & Gray, 2004; Litz, Gray, Bryant, & Adler, 2002; McNally, Bryant, & Ehlers, 2003). Not only does CISD fail to remove immediate symptoms effectively, but a growing body of evidence suggests that it fails to prevent subsequent posttraumatic stress disorder (PTSD) (Bisson, McFarlane, & Rose, 2000; Gist & Woodall, 2000).

Contemporary views suggest that interventions that tailor their focus and procedures to individual needs, that focus on early posttrauma, and that focus on functional recovery rather than psychopathology may be more advantageous than those that emphasize treatment of "mental illnesses." Psychological First Aid (PFA; National Child Traumatic Stress Network and National Center for PTSD, 2006) is swiftly becoming the new state-of-the-art model for early intervention. PFA accounts for the fact that the incidence rate of PTSD one year after exposure is barely above normative rates (e.g., Galea et al., 2002; Galea et al., 2003; Housley & Beutler, in press). The model also relies on self-efficacy as a driving force in recovery, which is a focal mediator of posttraumatic recovery (Benight & Bandura, 2004). The objectives of PFA can be conceptualized as aiding the adaptive coping and problem-solving skills of survivors who are identified as at risk (Young, 2006). PFA seeks to identify victims' needs and fosters the belief in one's own capacity to overcome trauma.

More extended interventions can be incorporated into the PFA model as client assessment warrants. For example, the Palo Alto Medical Reserve Corps (PAMRC) has developed a three-stage intervention program that provides intervention options for varying posttrauma time frames. Although the model of treatment developed by the PAMRC is designed to be true to the principles of effective treatment as outlined by the joint APA Division 12/North American Chapter of the Society for Psychotherapy Research Task Force (Castonguay & Beutler, 2006), the specific techniques used in the interventions are extracted from empirically supported interventions to fit strategic needs and principles (Housley & Beutler, in press).

However, although alternatives to CISD are becoming more plentiful and more research is being performed on them, there is continued reticence in the mental health community to explore and adopt these new skills. A deeper understanding of disaster, of the traumatic responses it generates, and of the resilience often found in "victims" and a willingness to use less prescriptive and more client-focused interventions are central to providing effective mental health services in the aftermath of major disasters (Beutler, Reyes, Franco, & Housley, 2006).

An Ounce of Prevention: How Psychology Can Help

The events of September 11, 2001, raised the specter of a disaster that could fundamentally disable our country, a disaster of such magnitude that the economic, governmental, and social fabric of the nation might not be able to be sewn back together. What will ensure social and government continuity in the event of a disaster "double punch"—for example, if a severe natural disaster coincidently occurred on the heels of a major terrorist attack? Our government continues to focus primarily on technical so-

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lutions to address disaster preparedness and recovery. Yet in the aftermath of a catastrophic event, when such technical assets are unavailable or destroyed, it is human behavior—and often human behavior alone—that determines the efficacy and rapidity of disaster recovery efforts.

Unfortunately, psychology as a discipline continues to view its role in disasters as narrowly focused on the final phases of these events, with much of the research, policy, and practice emphasis placed on treating trauma, rather than on its prevention. Instead, a comprehensive approach aimed at embedding psychological science throughout the five phases of disasters—planning, crisis communication, response, relief, and recovery—is needed (Jacobs, 1995). Such a stance would view psychology as a core component of a broad, interdisciplinary effort to mitigate disasters within a public health framework.

Yet while it is clear that psychology has much to offer in terms of national preparedness, this goal remains elusive nearly five years after 9/11. A search of PsycINFO shows that just three APA journal articles with the search terms "national preparedness" ($n = 0$), "emergency preparedness" ($n = 1$), "disaster preparedness" ($n = 0$), or "homeland security" ($n = 2$) are present in the literature, along with a handful of books (e.g., Mangelsdorff, 2006). To be sure, basic research in related areas is being performed, and these efforts are being published in a variety of transdisciplinary journals, but few concentrated efforts have been made to integrate this information and translate these findings into actionable information for policymakers and disaster managers and to encourage disaster research to enter the mainstream of formal psychological inquiry. With this systemic approach in mind, it is possible to see how a variety of psychology subdisciplines may contribute to efforts to strengthen national preparedness across the 12 problem areas we have delineated.

Communication, Coordination, and Command

The first five failures identified here revolve around problems in communication, coordination, planning, and command in the initial phases of disaster management. Military and cognitive psychologists have led the way in these areas, but broader involvement from industrial/organizational, personality, clinical, political, and international psychology would help resolve unanswered questions about how to manage joint military–civilian disaster teams.

For example, personality and clinical psychologists may be able to explore individual disaster managers' aptitude for command. Aircraft pilots and military personnel have been repeatedly demonstrated to differ from normative population samples using objective personality measurements, and variations within these military populations have been noted (Bartone, Snook, & Tremble, 2002; Boyd, Patterson, & Thompson, 2005; Wakcher, Cross, & Blackman, 2003). However, initial work to identify a stable set of personality characteristics that predict emergency commander performance has not met with similar success (Flin & Slaven, 1996). Further, little research has been conducted on the personality and cognitive factors found in successful large-scale coalition leaders or members (see, e.g., Sutton & Edelman, 2005).

The psychoanalytic perspective may also offer important insights into the "managerial ignorance" evident in Hurricane Katrina. It has been hypothesized that managers use defensive, narcissistic techniques to manage their own self-esteem, which is deeply meshed with the identity of the employing agency (Roux-Dufort, 2005). Psychoanalytic theory suggests that managers frequently use rationalization, denial, and self-serving biases such as escalating commitment to prior actions in order to maintain self-esteem in the midst of worsening crises (Roux-Dufort, 2005). Although these speculations have not been researched to date, they offer important hypotheses that may help us understand some of the failures that occurred during the Katrina rescue effort.

Problems associated with authority transfer in government response to disaster illuminate an important intersection between political and narrative psychology. As mentioned earlier, the actions taken in Hurricane Katrina point to a long-standing resentment of the federal government in the South. These feelings of resentment may have impacted governors' willingness to formally request federal assistance during Hurricanes Katrina and Andrew. The psychocultural narrative and identity of the affected region may deeply impact a leader's sense making of a disaster, and this narrative may ultimately serve to broaden or circumscribe the field of options the leader views as viable (Ross, 2003; Shamir & Sagiv-Schifter, 2006).

There is also room for traditional, game-theory-based political psychology research on human behavior during disasters. For instance, a disaster provides a powerful superordinate goal (Sherif, 1958) for the individuals charged with its mitigation. Yet, it is clear that the interest of disaster managers' parent agencies and other influences

often conflict with optimal disaster response (Pearson & Clair, 1998). Why are some managers more concerned about maintaining the image of their agency while others "defect" to embrace the extra-agency goals of an ephemeral disaster response coalition?

Learning, Training, and Performance Assessment

The next three failures identified in the foregoing paragraphs address ambiguity in training standards, problems with LLS, and difficulties in designing appropriate performance assessment mechanisms for large-scale disaster response efforts. Educational, learning, cognitive, and motivation psychologists and psychometrists are uniquely positioned to assist in these areas.

For example, basic research in cognitive psychology research has been performed with teams and individuals involved in high-risk, high-consequence tasks for some time (Pearson & Clair, 1998). Yet while the negative consequences of irrationality and cognitive biases have been demonstrated to impair crisis decision making, the application of this knowledge for coalition disaster teams in cognitively ergonomic lessons learned and decision support systems lags, making these groups vulnerable to decisioning failure (Franco et al., 2005).

The other side of the training coin involves assessing skill and implementation. The psychometrics of human performance assessment is a multifaceted field, requiring a fine balance between reliability and ecological validity (Linn, Baker, & Dunbar, 1990; Wass, Van der Vleuten, Shatzer, & Jones, 2001). The difficulties of accurately assessing actual performance become even more nuanced as the scale of evaluation moves upward to involve performance of multiple federal civilian and military agencies interacting with state and local systems. Instrumentation techniques, statistical procedures (see, e.g., Muijtjens, Kramer, Kaufman, & Van der Vleuten, 2003), and critical insight that might be offered by psychologists and psychometrists are currently applied in the evaluation of individual high-reliability teams but are not greatly evidenced in the evaluation of larger scale coalition disaster management performance (Franco et al., 2005).

Poverty, Rumor, and Community Preparedness

The three areas identified for improvement here include addressing issues of poverty and other marginalizing factors; creating effective, contextually appropriate crisis communication systems; and improving personal and community preparedness. Subdisciplines of psychology that are particularly suited to these tasks include community, media, social issues, aging, object relations, theoretical, and social psychology—among others.

For example, Lloyd Etheredge's (1977) psychodynamic government dependency model predicts with striking accuracy what happened in the aftermath of Hurricane Katrina: Mayor Ray Nagin's paradoxical demands for more federal involvement combined with resentment at potential federal interference and control; Governor Blanco's simultaneous demands for more federal action that she also blocked by not formalizing her requests; and progressive demoralization, bewilderment, and fury from a civilian population toward the federal government—met with equal disbelief and anger from federal officials—ultimately leading to stalemate and unnecessary civilian deaths, trauma, and unrest (for a discussion of psychoanalytic theory application to governance, see e.g., Gerson, 2004; Thomas, 1979).

Disaster Mental Health

Although many strides have been made in the conceptualization and delivery of disaster mental health service over the last two decades, such as the development of APA's Disaster Response Network (Jacobs, 1995) and the introduction of the PFA manual, improvements are still needed. In this area, the collaboration of those involved in forensic psychology, ethics, death and dying studies, and the psychology of religion will be particularly informative.

For instance, in major disasters, the dead are often recovered in various states of dismemberment and decay. In previous disasters, some family members were deeply troubled by mortuary staff who prevented access to the bodies of their deceased loved ones (Dix, 1998). It is conceivable that mishandling of the interaction between the living and the dead may increase memory consolidation of the traumatic event, elevating the risk of psychological injury (Shalev et al., 1998). PFA training for clinicians should include information on how to address the handling of the dead with survivors in ways that are sensitive to personal preference, level of trauma exposure, cultural considerations, and religious background.

Finally, further work is needed to train disaster mental health specialists in the legal and liability intricacies surrounding intervention in the aftermath of mass-casualty situations (Abdel-Monem & Bulling, 2005). Psychologists in disaster response settings face unique legal and ethical problems that involve their own proficiency and adherence to professional standards and the supervision of other licensed and unlicensed mental health workers in situations where there is greater risk of coercion and impropriety.

Conclusion

Psychologists should endeavor to engage more directly with disaster planning agencies, such as the National Emergency Management Association and state offices of emergency management, as well as develop closer links with first response teams in their own localities. These linkages will allow psychologists to educate responders in the clinical care of mass trauma victims and provide lawmakers a greater understanding of how basic psychological principles can be used to improve disaster management. Finally, disasters create unexpected juxtapositions that allow subfields to interact in novel ways, forming new nexus points for research in human behavior. A few examples of important areas for further integration of the behavioral sciences in overall disaster management have been offered here; however, a much wider constellation of legal, policy, and

procedural issues exists, which the field of psychology must begin to inform.

The security of the nation, both from terror attacks and from natural events, is fundamentally based on the behavioral responses of its citizens. An interdisciplinary approach to the field of disaster management that views psychology as a central element—rather than second to engineering or information science—will lead to stronger, more resilient communities, result in better decisions on the part of government, and hopefully reduce the need for clinical care in future catastrophes.

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